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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/776,671	02/06/2001	Masaru Honda	Q62961	2529 11
7590	10/30/2003			EXAMINER
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC 2100 PENNSYLVANIA AVENUE, N.W. WASHINGTON, DC 20037-3213			HON. SOW FUN	
			ART UNIT	PAPER NUMBER
			1772	

DATE MAILED: 10/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

cb12

Office Action Summary	Application No.	Applicant(s)
	09/776,671	HONDA ET AL.
	Examiner	Art Unit
	Sow-Fun Hon	1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 10 September 2003.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-19 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Response to Amendment

Withdrawn Rejections

1. The 35 U.S.C. 103(a) rejections of claims 1-16 in Paper # 8 (mailed 03/10/03) have been withdrawn due to Applicant's amendment in Paper # 10 (filed 09/10/03).

New Rejections

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1-2, 4, 12-14, 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Onderkirk et al. (US 6,096,375).

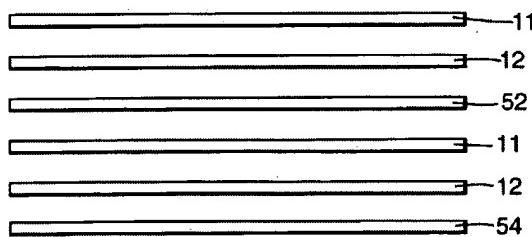


Fig. 5

Onderkirk et al. teaches a transflector (partial reflector in which part of light transmits and remaining part reflects) between the backlight 54 and the rear polarizer 12 which is next to backlight 54 in a liquid crystal display. Dichroic polarizer 11 is combined with reflective polarizer 12 (column 7, lines 15-40). Since backlight 54 is a light source, liquid crystal cell 52

(module), rear dichroic polarizer 11 and reflector (rear reflective polarizer 12) are next to light source 54 which is placed on the edge, claims 12-14 are met.

A transmission axis of the dichroic polarizer 11 and a transmission axis of the reflective polarizer 12 are directed to the same direction since light ray 19 is preferentially transmitted by both dichroic polarizer 11 and reflective polarizer 12 (column 13, lines 30-40).

The dichroic polarizer is iodine or dye-based. The dichroic polarizer may be laminated with a birefringent polymer (column 6, lines 45-65). The reflective polarizer is a multi-layer laminate composed of two or more kinds of polymer films (column 9, lines 40-60).

Claim Rejections - 35 USC § 103

4. Claims 3, 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onderkirk et al. in view of Weber et al.

Onderkirk et al. has been discussed above and teaches the transflective polarizer comprising a dichroic polarizer, a reflective polarizer and a transreflector, wherein a transmission axis of the dichroic polarizer and a transmission axis of the reflective polarizer are directed to the same direction, and wherein said transreflector does not include a reflective polarizer.

Onderkirk et al., however, fails to teach the light diffusive layer laminated on at least one side of the dichroic polarizer, that the two or more kinds of polymers comprising one of the polymer films in the reflective polarizer, consists of a continuous polymer matrix with droplets dispersed therein, or that the film has a cholesteric liquid crystal and a quarter wavelength film.

Weber et al. teaches a transflective polarizer which comprises a dichroic polarizer and a reflective polarizer in a liquid crystal display (device) (column 9, lines 45-65, column 10, lines 1-

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10 and column 12, lines 1-30). A light diffusive layer (optical diffuser 134) to promote viewing of the LCD at a wide range of viewing angles (column 11, lines 40-70) is laminated on at least one surface of the dichroic polarizer 140 (column 12, lines 1-5).

The reflective polarizer is a multi-layer laminate composed of two or more kinds of polymer films (column 10, lines 1-10). The birefringent retarder film in the reflective polarizer has a quarter wavelength, and may have cholesteric (cholesteric polarizer) liquid crystal dispersed as droplets (polymer-dispersed liquid crystal) (column 9, lines 30-45, column 15, line 60-70 and column 7, lines 50-60). Since Weber et al. does not teach any in-phase retardation value of the transreflector, it appears to be zero. Either the fast or the slow axis of the transreflector and the dichroic polarizer are directed to the same direction since Weber et al. does not specify the preference.

Weber et al. teaches different embodiments of the LCD (liquid crystal display device), one being a light transmitting plate (light guide), light source (lamp) and a reflector (reflective housing) in this order. Another embodiment has a light source, a liquid crystal cell and a dichroic (absorptive) polarizer on the very top.

Both Weber et al. and Onderkirk et al. are directed to transreflective polarizers in a liquid crystal display, and are thus analogous art.

Therefore it would have been obvious to one of ordinary skill in the art to have used the different embodiments of the transreflective polarizer as taught by Weber et al. in the invention of Onderkirk et al. in order to obtain a liquid crystal display with the desired end-use.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onderkirk et al. in view of Ketchpel.

Onderkirk et al. has been discussed above and teaches the transflective polarizer comprising a dichroic polarizer, a reflective polarizer and a transflector, wherein a transmission axis of the dichroic polarizer and a transmission axis of the reflective polarizer are directed to the same direction, and wherein said transflector does not include a reflective polarizer.

Onderkirk et al., however, fails to teach that the transflector is a metal film deposited on a polymer film.

Ketchpel teaches a transflector which is a metal film deposited on a polymer film (column 2, lines 10-40), and which permits reflection of substantial percentages of incident light and transmission of substantial percentages of back light (column 4, lines 55-60).

Because Ketchpel teaches that the transflector permits reflection of substantial percentages of incident light and transmission of substantial percentages of back light, it would have been obvious to one of ordinary skill in the art to have used the transflector of Ketchpel as the transflector in the invention of Onderkirk et al. in order to obtain a transreflective liquid crystal display with high reflection of incident light and high transmission of back light.

6. Claims 10-11, 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onderkirk et al. in view of Perregaux et al. and Cobb Jr. et al.

Onderkirk et al. has been discussed above and teaches the transreflective polarizer comprising a dichroic polarizer, a reflective polarizer and a transflector, wherein a transmission axis of the dichroic polarizer and a transmission axis of the reflective polarizer are directed to the same direction, and wherein said transflector does not include a reflective polarizer.

Onderkirk et al., however, fails to teach a transflector which is a layer comprising scaly reflective particles in a pressure sensitive adhesive, wherein the scaly reflective particle is a

particle comprising a layer of metal oxide on the surface of a mica piece, and the particles have different refractive indices from the resin matrix of the film.

Perregaux et al. teaches a transflector which contains a matrix of polystyrene to which is added scaly reflective particles (pieces) of mica coated with metal oxide (titanium dioxide) and particles of polyethylene placed between an LCD 21 and a light source 22 (column 4, lines 20-35). The particles have refractive indices different from each other and the matrix. Perregaux et al. teaches that the transflector enables the very exact setting of the ratio of transmission to reflection by the suitable selection of the type and the amount of the particles (first filling material) (column 2, lines 45-70).

Because Perregaux et al. teaches that the transflector enables the very exact setting of the ratio of transmission to reflection, it would have been obvious to one of ordinary skill in the art to have used the specific transflector of Perregaux et al. as the transflector in the invention of Onderkirk et al. in order to obtain a transreflective polarizer with the desired setting of the ratio of transmission to reflection.

Perregaux et al., however, fails to teach that the polystyrene matrix is a pressure sensitive adhesive.

Cobb, Jr. et al. teaches a transreflective liquid crystal display (column 1, lines 15-30). Cobb et al. teaches a diffusing layer on a reflective polarizer, in the form of an adhesive made from droplets dispersed in a pressure sensitive adhesive (column 3, lines 35-68), composed of more than two different polymers, acrylic/styrene particles in a polyacrylate matrix. Cobb, Jr. et al. teaches that the diffusing adhesive performs the dual function of diffusion and adhesion (column 3, lines 25-65 and column 4, lines 1-10).

Since Cobb et al., Perregaux et al. and Onderkirk et al. are directed to liquid crystal displays, they are analogous art.

Therefore it would have been obvious to one of ordinary skill in the art to have used the teaching of Cobb et al. to apply the transreflector of Perregaux et al. in the form of a pressure sensitive adhesive in the invention of Onderkirk et al. in order to obtain a transreflective polarizer whereby the transreflector performs the dual function of transreflection and interlaminar adhesion.

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onderkirk et al. in view of Inoue et al.

Onderkirk et al. has been discussed above and teaches the transreflective polarizer comprising a dichroic polarizer, a reflective polarizer and a transreflector, wherein a transmission axis of the dichroic polarizer and a transmission axis of the reflective polarizer are directed to the same direction, and wherein said transreflector does not include a reflective polarizer.

Onderkirk et al., however, fails to teach one or more phase retarders placed between the transreflective polarizer and the liquid crystal cell and/or between the liquid crystal cell and the dichroic polarizer.

Inoue et al. teaches a transreflective liquid crystal device with a transreflector (column 2, lines 40-50). Inoue et al. teaches that a phase retarder (anisotropic substance) is placed between the liquid crystal cell and the polarizer (polarizing plate) (column 3, lines 1-50) which can be dichroic (absorptive) (column 18, lines 35-60) in order to obtain the desired retardation effect for multiple color display (column 1, lines 55-65).

Inoue et al. thus demonstrates that it would have been obvious to one of ordinary skill in the art to have placed a phase retarder between the liquid crystal cell and the rear dichroic

polarizer in the invention of Onderkirk et al. in order to obtain a transflective liquid crystal display with the desired retardation effect for multiple color display.

Both Inoue et al. and Onderkirk et al. are directed to liquid crystal displays, and are thus analogous art.

Response to Arguments

8. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

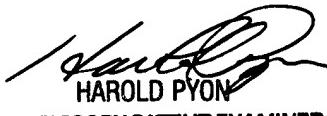
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Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (703)308-3265. The examiner can normally be reached Monday to Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (703)308-4251. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9311.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

SF
Sow-Fun Hon
10/21/03


HAROLD PYON
SUPERVISORY PATENT EXAMINER
1992

10/27/03